

Implementing Cisco Quality of Service (QoS)

ID QOS Price 2,890.— €(excl. tax) Duration 5 days

Who should attend

The primary target audiences for the course are:

- Pre- and post-sales technical engineers responsible for designing, implementing, or troubleshooting networks
- Network architects responsible for designing multiservice networks to carry voice, video, and data traffic in enterprise or service provider environments
- Advanced Unified Communications Specialization
- Master UC Specialization
- Master Telepresence ATP

Secondary target audiences are:

- CCIE R&S Candidates

Prerequisites

This section lists the skills and knowledge that learners must possess to benefit fully from the course. It includes recommended Cisco learning offerings that the learner may complete to benefit fully from this course.

The learner should possess the knowledge and skills associated with the Cisco Certified Networking Associate [Implementing and Administering Cisco Solutions \(CCNA\)](#).

Course Objectives

After completing this course the student should be able to:

- Explain the need for QoS, describe the fundamentals of QoS policy, and identify and describe the different models that are used for ensuring QoS in a network
- Explain the use of MQC and AutoQoS to implement QoS on the network and describe some of the mechanisms used to monitor QoS implementations
- Given a converged network and a policy defining QoS on the network and describe some of the mechanisms used to monitor QoS implementations
- Use Cisco QoS queuing mechanisms to manage network

congestion

- Use Cisco QoS congestion avoidance mechanisms to reduce the effects of congestion on the network
- Use Cisco QoS traffic policing and traffic shaping mechanisms to effectively limit the rate of network traffic
- Given a low speed WAN link, use Cisco link efficiency mechanisms to improve the bandwidth efficiency of the link
- Describe the recommended best practices and methods used for end-to-end QoS deployment in the enterprise

Course Content

QoS v2.5 includes several updates and aligns to a minimally updated blueprint. In comparison to the previous version, all graphics have been updated and content flow has been changed to reduce the amount of slides covered during course delivery. Several topics have been removed, while some topics, such as Cisco AutoQoS, QoS monitoring, and Campus QoS have been added or expanded. Course content has been adapted to Cisco IOS Software Release 15 and technically updated. Labs were expanded and reflect an updated topology and current networking gear.

Detailed Course Outline

Module 1 Introduction of QoS

- Review Converged Networks
- Understand QoS
- Describe Best-Effort and Integrated Services Models
- Describe the Differentiated Services Model

Module 2 Implement and Monitor QoS

- MQC Introduction
- Monitor QoS
- Define Campus AutoQoS
- Define WAN AutoQoS

Module 3 Classification and Marking

- Classification and Marking Overview

- MQC for Classification and Marking
- NBAR for Classification
- Use of QoS Preclassify
- Campus Classification and Marking

Module 4 Congestion Management

- Queuing Introduction
- Configure WFQ
- Configure CBWFQ and LLQ
- Configure Campus Congestion Management

Module 5 Congestion Avoidance

- Congestion Avoidance Introduction
- Configure Class-Based WRED
- Configure ECN
- Describe Campus-Based Congestion Avoidance

Module 6 Traffic Policing and Shaping

- Traffic Policing and Shaping Overview
- Configure Class-Based Policing
- Campus Policing
- Configure Class-Based Shaping
- Configure Class-Based Shaping on Frame Relay Interfaces
- Configure Frame Relay Voice-Adaptive Traffic Shaping and Fragmentation

Module 7 Link Efficiency Mechanisms

- Link Efficiency Mechanisms Overview
- Configure Class-Based Header Compression
- Configure LFI

Module 8 Deploying End-to-End QoS

- Apply Best Practices for QoS Policy Design
- End-to-End QoS Deployments

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